

REMARKS

Applicants have reviewed the most recent (non-final) Office Action in detail and note the withdrawal of the objections to the specification and drawings and the withdrawal of the rejection of claims 12 and 13 on §112 grounds. Applicants will respond to each new ground of rejection in detail below.

Claim 1 has been amended. Basis for the amendment may be found in the specification, for example, at page 7, paragraph [0027] and page 8, paragraph [0028]. No new matter has been entered.

The Rejection of Claims 1-3 and 5-7 under 35 USC §103

In the Office Action, the Examiner rejected claims 1-3 and 5-7 under 35 USC §103 as unpatentable over Hatch et al. (US 5840386) in view of van Weperen et al. (US 2001/0046575) (newly-cited). With the amendment to independent claim 1, applicants submit that this ground of rejection is moot. The Examiner concedes that “Hatch does not disclose making the outer layer of a photocurable material” (Office Action, page 7) or of a natural or synthetic uncured rubber (Office Action, page 9). Likewise, van Weperen does not teach such a feature either.

The Rejection of Claim 4 under 35 USC §103

In the Office Action, the Examiner rejected claim 4 under 35 USC §103 as unpatentable over Hatch et al. (US 5840386) in view of van Weperen et al. (US 2001/0046575) (newly-cited), in further view of Francis (US 2614058) (newly cited). With the amendment to independent claim 1, from which claim 4 depends, applicants submit that this ground of rejection is moot. The Examiner concedes that “Hatch does not disclose making the outer layer of a photocurable material” (Office Action, page 7) or of a natural or synthetic uncured rubber (Office Action, page 9). Likewise, neither van Weperen nor Francis teach such a feature.

The Rejection of Claims 8-10 under 35 USC §103

In the Office Action, the Examiner rejected claims 8-10 under 35 USC §103 as unpatentable over Hatch et al. (US 5840386) in view of van Weperen et al. (US 2001/0046575) (newly-cited), in further view of Bresson et al. (US 5352507) (newly cited). With the amendment to independent claim 1, from which claims 8-10 depend, applicants submit that this ground of rejection is moot. The

Examiner concedes that “Hatch does not disclose making the outer layer of a photocurable material” (Office Action, page 7) or of a natural or synthetic uncured rubber (Office Action, page 9).

Likewise, neither van Weperen nor Bresson teach such a feature. Bresson describes an offset blanket sleeve in which the outer layer comprises a cured rubber which is designed to accept ink, not an uncured material.

The Rejection of Claims 11-13 under 35 USC §103

In the Office Action, the Examiner rejected claims 11-13 under 35 USC §103 as unpatentable over Hatch et al. (US 5840386) in view of van Weperen et al. (US 2001/0046575) (newly-cited), in further view of Castelli et al. (US 5700343) (newly cited). With the amendment to independent claim 1, from which claims 11-13 depend, applicants submit that this ground of rejection is moot. The Examiner concedes that “Hatch does not disclose making the outer layer of a photocurable material” (Office Action, page 7) or of a natural or synthetic uncured rubber (Office Action, page 9). Likewise, neither van Weperen nor Castelli teach such a feature. Castelli describes an offset blanket sleeve in which the outer layer comprises a cured elastomer which is designed to accept ink, not an uncured material.

The Rejection of Claims 14-16 under 35 USC §103

Also in the Office Action, the Examiner rejected claims 14-16 under 35 USC §103 as unpatentable over Hatch and van Weperen, taken further with Lane et al. (US 5983799) (newly-cited) and Fan (EP 0766142) (newly-cited). Hatch is directed to a liquid transfer roll which is adapted to be mounted onto a mandrel having an outer metal tube 29 covered with a corrosion resistant coating 31. The inner layer 26 of the sleeve is comprised of a fiber-reinforced polymer resin (col. 7, lines 34-38). van Weperen is directed to a method of making a thin-walled cylinder of a fiber-reinforced polymeric material. Lane describes a replaceable outer layer for a flexographic printing sleeve. Likewise, Fan is also directed to a flexographic printing sleeve. The Examiner asserted that it would have been obvious to “modify” Hatch by replacing the “metal outer layer” with a “photosensitive layer as taught by Lane and Fan.” Further, the Examiner asserted that because Fan taught wrapping a photosensitive sheet around a cylinder, or alternatively extruding a photosensitive layer around a cylinder, that it would have been obvious to modify Lane’s outer layer to form it in the manner taught by Fan.

Applicants strongly disagree that these four reference teachings can be combined in the piecemeal fashion proposed or that, even if combined, teach the claimed subject matter. Initially, applicants submit that the Examiner has misinterpreted certain passages in Lane (commonly-assigned). Lane is directed to a cylindrical sleeve construction in which none of the layers are metal. By manufacturing the sleeve using only polymeric materials and fabric reinforcement materials, the finished sleeve can be easily mounted and dismounted from an underlying carrier using pressurized air. The passages in column 1 of Lane, relied upon by the Examiner, discuss prior art rubber-covered rollers in which the polymer/rubber layers were built onto and permanently bonded to an underlying “cylindrical) metal core.” Thus, when the outer polymeric covers became worn, the entire roller had to be removed and sent to an outside source where the old rubber was ground off and a new cover was applied. See, col. 1, lines 20-26. Lane’s replaceable sleeve is advantageous in that the polymeric components of the sleeve are air-mounted onto an underlying metal cylinder. When the “cover” becomes worn, a new sleeve can be installed by simply using air pressure to dismount the worn sleeve and mount a replacement sleeve at the job site.

Later in column 1, Lane describes the use of “thin metal sleeves for use on printing cylinders” in addition to sleeves having reinforced polymer bases. The construction of such “thin metal sleeves” is well known in the offset printing art. Such sleeves include a thin metal (typically nickel) base onto which the polymer and reinforcing layers would be applied. Examples of such sleeves include several of the Vrotacoe patents listed on the face of the Lane patent (see, e.g., U.S. 5,245,923; 5,304,267; and 5,440,981). The advantages described by Lane of “thin” metal sleeves and polymeric sleeves over metal rollers were that they were easily mounted and dismounted onto underlying cylinders using air pressure.

Thus, when the Examiner asserted that “Lane discloses that the outer layer is known to be made of a metal sleeve” (Office Action, page 7), that assertion was factually incorrect. Lane’s description of the use of “thin metal sleeves” was in the context of the use of metal as the *inner* base of the sleeves, not any surface layer. And, Lane’s statement that the “thin metal sleeves” and the polymeric-based sleeves provided “an advantage over metal rollers” was on the basis that both the “thin metal sleeves” and polymeric-based sleeves were “readily expandable.” Thus, Lane does not state that “polymeric layers offer the advantage of flexibility that is not found in metal sleeves (column 1, lines 40-56)” as asserted by the Examiner. Prior art “thin metal sleeves” were “flexible”

in the sense that they were capable of being expanded under air pressure, similar to polymeric-based sleeves.

The Examiner's conclusion that “[i]t would have been obvious to … modify Hatch by substituting the metal outer layer for a photosensitive thermoplastic layer as taught by Lane and Fan '142 in order to make an outer layer that is flexible, expandable, and contractible,” is based on a misreading of Lane's teachings, as discussed in detail above. The conclusion is also erroneous because Hatch very clearly *requires* a metal outer layer which is then coated and laser engraved in order to function in its intended manner. Hatch explicitly states that prior rubber-covered liquid transfer rolls did not function satisfactorily. See, column 3, lines 7-9. There is absolutely no factual or legal basis to change Hatch's outer metal layer to a polymer layer, per Lane, and then change Lane's polymer layer to a photocurable layer, per Fan. The proposed combinations and substitutions are clearly based on hindsight and/or a misreading of the actual teachings of these references. The rejection is not well taken and should be withdrawn.

The Rejection of Claim 17 under 35 USC §103

Also in the Office Action, the Examiner rejected claim 17 under 35 USC §103 as unpatentable over Hatch in view of van Weperen, Lane, Fan, and further in view of Rossini et al (US 2002/0069777). Solely for the purpose of simplifying this response, applicants submit that claim 17, which depends from claim 16, is patentable for the same reasons that claim 16 are patentable as discussed in detail above.

The Rejection of Claims 18 and 21 under 35 USC §103

Also in the Office Action, the Examiner rejected claims 18 and 21 under 35 USC §103 as unpatentable over Hatch and van Weperen taken further with Julian (US 4144813) (newly-cited) and Okubo et al. (US 5884559). The Examiner concedes that Hatch teaches an outer metal layer, while claims 18 and 21 recite outer uncured natural or synthetic rubber layers. The Examiner then asserts that Hatch describes prior liquid transfer rolls that have outer rubber layers (Office Action, page 9), and that Julian is cited by Hatch as an example of “a printing sleeve comprising a rubber outer layer.”

Applicants again question the Examiner's reading of Hatch. In the passage relied upon in the Office Action, column 2, line 49 through column 3, line 9, Hatch is discussing prior art liquid transfer rolls *that have metal outer layers*. Hatch explicitly states that such prior transfer rolls have a

“radially outermost plastic layer” that is “coated with a *metal layer*.” [Emphasis supplied.] Hatch goes on to describe such metal layers as being typically electroplated copper.

With respect to the German equivalent to Julian (DE-A-2700118) mentioned by Hatch at col. 2, line 64, Hatch goes on to state, at column 3, lines 7-9, that prior art liquid transfer rollers having copper as well as rubber outer layers exhibited “unsatisfactory” corrosion properties. Thus, while Julian uses an outer rubber layer, Hatch criticizes that type of material and instead uses a metal outer layer having a corrosion-resistant coating for his liquid transfer roll. This teaching in Hatch constitutes a teaching away from what the Examiner has proposed. One skilled in the art would not substitute a rubber layer for Hatch’s outer metal layer because Hatch himself states that such a rubber layer exhibits unsatisfactory corrosion properties.

The application of Okubo’s teachings is predicated on the substitution, in the first instance, of Julian’s rubber outer layer for Hatch’s metal outer layer. As discussed in detail above, one skilled in the art would not be motivated to make such a substitution because Hatch teaches that the use of rubber as an outer layer is unsatisfactory. For all of these reasons, applicants submit that the rejection is not well taken and should be withdrawn.

The Rejection of Claim 19 under 35 USC §103

Also in the Office Action, the Examiner rejected claim 19 under 35 USC §103 as unpatentable over Hatch and van Weperen taken further with Julian (US 4144813) (newly-cited) and Okubo et al. (US 5884559). The Examiner concedes that Hatch teaches an outer metal layer, while claim 19 recites an outer uncured natural or synthetic rubber layer. The Examiner then asserts that Hatch describes prior liquid transfer rolls that have outer rubber layers (Office Action, page 9), and that Julian is cited by Hatch as an example of “a printing sleeve comprising a rubber outer layer.”

Applicants again question the Examiner’s reading of Hatch. In the passage relied upon in the Office Action, column 2, line 49 through column 3, line 9, Hatch is discussing prior art liquid transfer rolls *that have metal outer layers*. Hatch explicitly states that such prior transfer rolls have a “radially outermost plastic layer” that is “coated with a *metal layer*.” [Emphasis supplied.] Hatch goes on to describe such metal layers as typically being electroplated copper.

With respect to the German equivalent to Julian (DE-A-2700118) mentioned by Hatch at col. 2, line 64, Hatch goes on to state, at column 3, lines 7-9, that prior art liquid transfer rollers having copper as well as rubber outer layers exhibited “unsatisfactory” corrosion properties. Thus, while

Julian uses an outer rubber layer, Hatch criticizes that type of material and instead uses a metal outer layer having a corrosion-resistant coating for his liquid transfer roll. This teaching in Hatch constitutes a teaching away from what the Examiner has proposed. One skilled in the art would not substitute a rubber layer for Hatch's outer metal layer because Hatch himself states that such a rubber layer exhibits unsatisfactory corrosion properties.

The application of Okubo's teachings is predicated on the substitution, in the first instance, of Julian's rubber outer layer for Hatch's metal outer layer. As discussed in detail above, one skilled in the art would not be motivated to make such a substitution because Hatch teaches that the use of rubber as an outer layer is unsatisfactory. For all of these reasons, applicants submit that the rejection is not well taken and should be withdrawn.

The Rejection of Claim 20 under 35 USC §103

Also in the Office Action, the Examiner rejected claim 20 under 35 USC §103 as unpatentable over Hatch and van Weperen taken further with Julian (US 4144813) (newly-cited) and Gayle et al. (US 6401613). The Examiner concedes that Hatch teaches an outer metal layer, while claim 20 recites an outer uncured natural or synthetic rubber layer. The Examiner then asserts that Hatch describes prior liquid transfer rolls that have outer rubber layers (Office Action, page 9), and that Julian is cited by Hatch as an example of "a printing sleeve comprising a rubber outer layer."

Applicants again question the Examiner's reading of Hatch. In the passage relied upon in the Office Action, column 2, line 49 through column 3, line 9, Hatch is discussing prior art liquid transfer rolls *that have metal outer layers*. Hatch explicitly states that such prior transfer rolls have a "radially outermost plastic layer" that is "coated with a *metal layer*." [Emphasis supplied.] Hatch goes on to describe such metal layers as typically being electroplated copper.

With respect to the German equivalent to Julian (DE-A-2700118) mentioned by Hatch at col. 2, line 64, Hatch goes on to state, at column 3, lines 7-9, that prior art liquid transfer rollers having copper as well as rubber outer layers exhibited "unsatisfactory" corrosion properties. Thus, while Julian uses an outer rubber layer, Hatch criticizes that type of material and instead uses a metal outer layer having a corrosion-resistant coating for his liquid transfer roll. This teaching in Hatch constitutes a teaching away from what the Examiner has proposed. One skilled in the art would not substitute a rubber layer for Hatch's outer metal layer because Hatch himself states that such a rubber layer exhibits unsatisfactory corrosion properties.

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The application of Gayle's teachings is predicated on the substitution, in the first instance, of Julian's rubber outer layer for Hatch's metal outer layer. As discussed in detail above, one skilled in the art would not be motivated to make such a substitution because Hatch teaches that the use of rubber as an out layer is unsatisfactory. For all of these reasons, applicants submit that the rejection is not well taken and should be withdrawn.

Conclusion

For all of the above reasons, applicants submit that claims 1-21, as amended, are patentable over the cited and applied prior art and are in compliance with §112. Early notification of allowable subject matter is respectfully solicited.

Respectfully submitted,
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